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UNITED STATES DEPARTMENT OF AGRICULTURE

DEPARTMENT BULLETIN No. 1384

Washington, D. C. ▼ February, 1926

THE EFFECTIVENESS OF EXTENSION IN REACHING RURAL PEOPLE

A Study of 3,954 Farms in Iowa, New York, Colorado, and California, 1923–24

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FOREWORD

With a background of 10 years of cooperative extension work under the Smith-Lever Act, extension administrators and supervisors everywhere are seeking definite information upon which to base decisions affecting the future conduct of the work. Facts rather than opinions are needed. The field study reported in this bulletin was made by the Office of Cooperative Extension Work, in cooperation with the State extension services of Iowa, New York, Colorado, and California. Considerable light is thrown upon concrete problems concerning which extension leaders have long desired reliable information. The determination, in any adequate degree, of the results of extension teaching is a most complex matter. Only some of the more obvious results are here shown. It is hoped the present study may be the basis for more comprehensive studies in the future.

PURPOSE AND SCOPE OF STUDY

Is cooperative extension work in agriculture and home economics really reaching large numbers of rural people?

What better methods of farming and home making have been accepted by farmers and farm women as a result of extension teaching?

[1] For helping to plan the study and for making it possible to collect such a large number of farm and home records, the author is indebted to C. B. Smith, chief, Office of Cooperative Extension Work; R. K. Bliss, director of extension service, Iowa; M. C. Burritt, former director of extension service, and D. J. Crosby, professor in charge of extension research, New York; Roud McCann, director of extension service, Colorado; and B. H. Crocheron, director of extension service, California. The writer also gratefully acknowledges the valuable assistance rendered by other representatives of the Office of Cooperative Extension Work and of the State extension service in Iowa, New York, Colorado, and California, in obtaining field data.

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What extension methods have been effective in obtaining the adoption of these improved practices?

How do demonstrations compare in effectiveness with methods of the personal-service or propaganda type?

In the effective conduct of extension work, how important are land ownership, size of farm, distance from the extension office, membership in the extension association, contact with extension workers, and participation in extension activities?

What do farmers and farm women think of extension now that it has become established in a large number of counties?

To obtain information regarding these and many other related questions, the Office of Cooperative Extension Work, United States Department of Agriculture, cooperated with State extension services in studying representative farms and homes in typical sections of the country.

The data were collected by survey parties made up of State supervisory and administrative officers and subject-matter specialists and representatives of the Office of Cooperative Extension Work. In only a few cases was information collected by the county extension agents and then only sufficient to acquaint them with the field methods employed. Personal calls were made at each farm located in the areas selected and both the farmer and the farm woman were interviewed if at home.[2] Comparable information was obtained from each farm[3] and recorded on questionnaire cards prepared for the purpose. Following is a sample of the card used.

(Obverse)

FARM AND HOME SURVEY OF THE RESULTS OF EXTENSION

Community ---- Farm No. ---- Date ---- Renter ---- Owner ---- Phone ----
Name ---- Address ---- Size of farm ----
Type of farming ---- Hill ---- Valley ---- Kind of road ----
Number in family: Adults ---- Juniors' ages ---- Miles to agent's office ----
Member farm bureau (present) ---- (past) ---- Member home bureau (present) ---- (past) ----
Connection with extension work ----
Member of what farmers' cooperative associations ---- Grange ----
Extension activities on farm ----
In home ----
Other extension activities attended or participated in ----
Contacts with county agricultural agent ---- Home demonstration agent ----
Club agent ---- Project leaders or committeemen ----
What specialists ----

Farm and home practices adopted	Methods largely responsible *	Extension agents involved			
		County agricultural agent	Home demonstration agent	Club agent	Specialist

* Use following abbreviations: Correspondence (cor.), office calls (o. c.), telephone calls (tel.), farm visits (f. v.), study courses (st. c.), leader training (l. tr.), bulletins (bul.), circular letters (cir. l.), meetings (mtg.), news service (n. s.), extension schools (e. s.), demonstrations—adult (dem. a.), junior (dem. jr.), indirect contacts (ind.).

[2] In some cases it was necessary to obtain the information relating to the farm from the woman or the information relating to the home from the man. No one was found at home in the case of 6 per cent of the farms visited.

[3] The term "farm" as used in this publication refers to the farm and home as an economic unit and to the various individuals composing the operator's family.

(Reverse)

List below names of members of family who have carried on a junior project.

Name	Present age	Years in work	Project
(*a*)			
(*b*)			
(*c*)			

Training after club work	Present occupation	Present contact with extension work	Standing in community
(*a*)			
(*b*)			
(*c*)			

How has your community benefited through extension work? ----------

Suggestions for the improvement of the service: ----------

Attitude toward extension work----------

If not a farm bureau or home bureau member, do you feel free to attend extension meetings?------

Why was membership in farm bureau or home bureau discontinued: ----------

Essentially the same questionnaire was used for all four areas. In the first survey made in Iowa, however, not quite as detailed information was obtained as in the later surveys. Minor changes were, of course, made in the questionnaire card to suit local conditions.

Only actual farms were included in the study and no information was obtained from persons living in small villages or from those in the open country who did not operate farms. Before starting the field work considerable time was spent in the county extension office preparing information relative to the extension activities carried on in the county. In all cases those participating in the field survey were thoroughly acquainted with local work in order that more intelligent questions might be asked.

AREAS INCLUDED IN STUDY

In the four States—Iowa, New York, Colorado, and California—cooperating in this study, counties were selected where extension work had been carried on for several years and which were typical of large agricultural sections of the States. Within each county, an effort was made to select an area representative of the extension work of the county. The number of records obtained in each area varied with the number of areas within the State and the personnel assigned by the State extension director to assist in collecting the field data.

The first field data were collected during the summer of 1923 in Marshall County, Iowa, where an area comprising five townships was covered. In New York, during the fall of 1923 and the spring of 1924, three areas of approximately two townships each were covered in Chenango, Monroe, and Jefferson Counties. The Colorado and California areas were surveyed during the fall of 1924. In Colorado,

the area included the entire southern half of Logan County. The California areas covered a territory of about 36 square miles in the center of Stanislaus County and the southeastern half of Butte County.

It will be noted from Table 1 that the seven counties involved represent widely differing types of agriculture and size of extension problem, as measured by the number of farms in each county. At the time of the field work organized extension had been under way in these counties from 6 to 12 years. All of the counties employed a home demonstration agent as well as an agricultural agent. The three New York counties employed boys' and girls' club agents. One of the New York counties also employed an assistant home demonstration agent and a part-time assistant county agent. One of the California counties employed two assistant agents and the other one assistant agent.

The large variation in agriculture, size of counties, and number of county extension agents employed, as well as in the amount of specialist assistance available from the State agricultural colleges makes the composite area a fairly typical cross-section of the Eastern, Central, and Western States.

TABLE 1.—*Areas included in extension field studies, 1923–24*

State and county	Type of agriculture	Number of farms	County extension staff			Number of farm and home records obtained
			Line of work	Years under way	Number of workers at time of survey	
Iowa:						
Marshall	Grain Livestock	2,315	Agricultural agent Home demonstration agent	6 6	1 1	549
New York:						
Chenango	Dairy Cabbage Potatoes	3,838	Agricultural agent Home demonstration agent Club agent	9 5 4	1 1 1	330
Monroe	Fruit Potatoes Truck	5,174	Agricultural agent Home demonstration agent Club agent	11 6 2	[1] 1½ 2 1	513
Jefferson	Oats Hay Dairy	5,151	Agricultural agent Home demonstration agent Club agent	12 8 2	1 1 1	382
Colorado:						
Logan	Sugar beets Grain Livestock	1,874	Agricultural agent Home demonsrtation agent	12 6	1 1	765
California:						
Stanislaus	Deciduous fruit Grapes Melons Dairy	4,566	Agricultural agent Home demonstration agent	9 3	3 1	749
Butte	Deciduous fruit Citrus fruit Rice Livestock	2,219	Agricultural agent Home demonstration agent	6 2	2 1	666
Total						3,954

[1] A special assistant agent is employed six months of each year.

ECONOMIC CONDITIONS IN AREAS AT TIME OF STUDIES

The effects of low prices for agricultural products upon the point of view and outlook of the farmer and the various members of his family were apparent in all of the areas studied. Low prices for grain and livestock had compelled retired farmers in Iowa again to take up the operation of farms sold or rented during the more prosperous

times, and in Colorado these same factors had caused the abandonment of large numbers of dry-land farms, resulting from the subdivision of range land during the period of high prices. In New York low prices for potatoes, cabbage, fruit, grain, and milk caused widespread discontent. In California almost unprecedented drought during 1924 was an added discouraging influence. It is probable that under these unfavorable economic conditions farmers and farm women interviewed gave information less favorable to extension work than would have been the case during a prosperous season.

GENERAL INFORMATION RELATING TO FARMS STUDIED

Records were obtained from 3,954 farms and homes. Of this number 549 were for Marshall County, Iowa; 1,225 for Chenango, Monroe, and Jefferson Counties, N. Y.; 765 for Logan County, Colo.; and 1,415 for Stanislaus and Butte Counties, Calif. In the case of 74 per cent of the farms, the operators were the owners. (Table 2.) The highest percentage of owner-operators was in the California areas and the lowest percentage in the Iowa area. The average size of farm was 159 acres, ranging from 355 in Colorado to 83 in California. Telephones were found in 44 per cent of the homes in the New York, Colorado, and California areas. Fifty-two per cent of the farms in these three States were situated on improved roads. These 3,954 farms were situated at an average distance of 14 miles from the county extension office. The longest average distance was 18 miles in New York and the shortest 10 miles in California.

TABLE 2.—*General information relating to farms included in study*

Item	Number	Percentage
Farm and home records obtained	3,954	100
Farms operated by owners	2,945	74
Average size of farms—acres	159	
Homes having telephones	[1] 1,519	44
Farms located on improved roads	[1] 1,756	52
Average distance to county extension office—miles	14	

[1] For three States only, as this information was not obtained in Iowa.

CONTACT WITH EXTENSION WORKERS AND PARTICIPATION IN EXTENSION ACTIVITIES

In three of the four States concerned—Iowa, New York, and California—the farm bureau has been the principal farmers' organization cooperating with the extension forces in promoting extension work. In two of the States—New York and California—home bureaus or home departments of the farm bureau have been developed to assist in forwarding the home demonstration program. Of the farm operators in Iowa, New York, and California, 34 per cent were enrolled as farm-bureau members, and an additional 21 per cent had been members previously. In the New York and California areas, 16 per cent of the farm women were enrolled in the home bureau or in the home department of the farm bureau, and an additional 9 per cent had been previously enrolled. Some member of the farm family had functioned as a local leader of extension activities in the case of 11 per cent of all the farms. (Table 3.)

TABLE 3.—*Contact with extension workers and participation in extension activities*

Item	Number	Percentage
Farm and home records obtained	3,954	100
Members of farm bureau (past and present)	[1] 1,774	55
Members of home bureau (past and present)	[2] 673	25
Farms represented by local leaders	431	11
Farms on which extension activities had been conducted	586	15
Other farms participating in extension activities	1,773	45
Farms with boys and girls in club work	499	13
Farms reporting contact with:		
Some member of the extension service	2,732	69
County agricultural agent	2,330	59
Home demonstration agent	1,308	33
Subject-matter specialist	1,148	29

[1] For three States only, Colorado not being included.
[2] For the States of New York and California only.

The farm operator or members of his family had attended or taken part in some extension activity in the case of 60 per cent of the farms. (Fig. 1.) Field demonstrations, meetings, or other extension activities

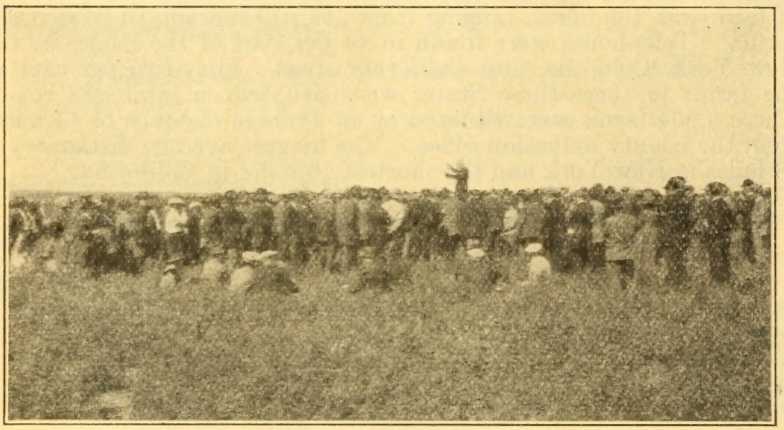

FIG. 1.—A field meeting to discuss the growing of legumes. Attendance at similar extension activities was reported in the case of 60 per cent of the farms studied

relating to either the farm or the home were reported on 15 per cent of the farms. Boys and girls on 13 per cent of the farms were either enrolled in club work or had been at some previous time. Direct contacts between representatives of the extension service and members of the farm family as a result of office calls, farm home visits, meetings, and the like, were reported in the case of 69 per cent of the farms. Contact with the county agricultural agent was reported by 59 per cent of the farms, with the home demonstration agent by 33 per cent of the farms, and with the subject-matter specialist of the college by 29 per cent of the farms.

FARMS AND HOMES REACHED BY EXTENSION

The highest percentage of farms and homes effectively reached was 88 per cent in a county where organized extension work had been under way 12 years, and the lowest percentage was 60 in a county having cooperated with the State college and the United

States Department of Agriculture in the conduct of extension work but six years.

A measure of the effectiveness of extension work is the adoption of better farm and home practices by farmers and home makers. The use of such improved practices advocated by the extension service was reported by 2,912, or 74 per cent, of the 3,954 farms studied, and 9,833 practices, or an average of 3.4, were reported adopted on these farms. (Table 4.) Agricultural practices only were reported adopted on 68 per cent of the 3,954 farms and home-economics practices only in 32 per cent of the homes.

The highest percentage of farms adopting agricultural practices only was 82 in a county employing a county agricultural agent 12 years, and the lowest 52 in a county employing an agent 6 years.

FIG. 2.—A pruning demonstration. The influence of the field, barn, and home demonstrations was reported in connection with 42 per cent of the improved practices adopted

In the case of home-economics practices, the highest percentage of homes reporting the adoption of practices taught by the extension service was 47 in a county where a home-demonstration agent had been at work 6 years, and the lowest percentage 22 in a county where a home-demonstration agent had been at work but 2 years.

TABLE 4.—*Farms and homes reporting the adoption of new or better practices*

Item	Number	Percentage	Average
Farm and home records obtained	3,954	100	
Farms reporting some changed practices	2,912	74	
Practices changed	9,833		3.4
Farms reporting agricultural practices changed	2,687	68	
Agricultural practices changed	6,979		2.6
Homes reporting home-economics practices changed	1,285	32	
Home-economics practices changed	2,854		2.2

The 9,833 new or better farm and home practices adopted on these farms as a result of extension effort represent, in so far as possible,

definite practices, such as orchard pruning, orchard spraying, poultry culling, grasshopper poisoning, treating seed wheat for smut, canning fruits and vegetables, use of dress form in sewing, and the like. (Figs. 2 and 3.) No attempt was made, however, to work out a

TABLE 5.—*Agricultural practices adopted by 5 per cent or more of the farms*

Iowa		New York		Colorado		California [1]	
Practice	Percentage of farms adopting	Practice	Percentage of farms adopting	Practice	Percentage of farms adopting	Practice	Percentage of farms adopting
Livestock marketing	46	Oat-smut treatment	25	Wheat varieties	24	Pruning trees	32
Poultry culling	27	Orchard spraying	24	Grasshopper control	14	Pruning vines	13
Orchard spraying	17	Marketing milk	14	Poultry culling	14	Poultry culling	9
Tuberculin testing	17	Lime	14	Corn	13	Irrigation	8
Soy beans	16	Corn	12	Prairie-dog control	11		
Oats	16	Orchard pruning	8	Swine breeding	10		
Wool marketing	7	Oats (general)	8	Wheat-smut treatment	9		
Lime	5	Potato-seed treatment	8				
		Poultry culling	7				
		Tuberculin testing	7				
		Potato-seed sources	6				
		Alfalfa	6				
		Wheat	6				
		Fertilizers	6				
		Dairy feeding	5				

[1] The wide range of agricultural production in the California areas accounts for the short list of outstanding practices adopted.

TABLE 6.—*Home-economics practices adopted by 5 per cent or more of the homes*

Iowa		New York		Colorado		California	
Practice	Percentage of homes adopting	Practice	Percentage of homes adopting	Practice	Percentage of homes adopting	Practice	Percentage of homes adopting
Canning	33	Canning	24	Canning	17	Dress forms	14
Nutrition	13	Sewing	9	Millinery	8	Millinery	12
Sewing	12	Dress forms	7	Dress forms	6	Clothing (general)	9
Dress forms	10	Nutrition	5	Sewing	6	Canning	6

classification of practices in advance of field work and to fit all changed practices reported into such a classification.

Practices as reported by farmers and farm women were recorded in as definite a way as possible and these classified later. A list of the more outstanding practices reported in each of the four States is given in Tables 5 and 6. This list represents only a small part of the entire list of practices reported in any of the areas. It will be noted that, although agricultural practices varied with the different types of agriculture in the different States, the home practices reported remained fairly constant in all of the areas involved.

EXTENSION METHODS WHICH INFLUENCED FARMS TO CHANGE PRACTICES

Every farmer and farm woman interviewed was asked to name the extension means or agencies which had influenced in any way the adoption of each of the improved practices reported adopted. This was rather difficult information to obtain, because in many cases the changed practices had resulted from the cumulative effect of several means none of which was outstanding. In other cases, however, the extension method which had influenced the home maker or farmer to adopt the better practice was definite and clear-cut.

For purposes of this study, the means or instruments commonly employed in extension work have been roughly classified in three

FIG. 3.—Home demonstration group learning to use the gummed-paper dress form. The making of such forms was one of the outstanding home practices reported in all areas

groups: (1) The personal-service group including farm and home visits, correspondence, office calls, telephone calls, study courses, leader-training meetings, and extension schools where systematic instruction is given; (2) the propaganda group including meetings, bulletins, exhibits, circular letters, and news service; and (3) the object-lesson group including adult and junior demonstrations. In addition to these three groups a fourth might be added to take care of the indirect spread of practice growing out of personal-service, propaganda, and object-lesson methods. A farmer may copy a better practice adopted by his neighbor and in turn pass it on to several other farmers. Thus the original extension method involved soon becomes difficult to identify.

Of the 2,912 farms reporting the adoption of better practices, 68 per cent reported the influence of methods falling in the propaganda group, the variation in percentage in the four States ranging from 51 to 92. (Table 7.) Methods falling in the personal-service group were

mentioned as influencing 27 per cent of the farms, the lowest percentage being 11 and the highest 43. Object-lesson methods were cited by 58 per cent of the farms, the extremes being 43 per cent and 79 per cent. Indirect influences were reported by 49 per cent of the farms in three States. Leaving indirect influences out of consideration, the percentage of farms reporting propaganda methods was highest in every State, with object-lesson methods second, and personal-service methods third. Sixty-eight per cent of the farms reported having been influenced by the county agricultural agent to adopt better methods, 35 per cent by the home demonstration agent, and 24 per cent by the subject-matter specialist.

TABLE 7.—*Methods reported as having influenced farmers and home makers to adopt better practices* [1]

Item	Number	Percentage
Farms reporting changed practices	2,912	100
Farms reporting influence of:		
Propaganda methods	1,981	68
Personal-service methods	798	27
Object-lesson methods	1,710	58
Indirect influences	[2] 1,211	49
County agricultural agent	1,987	68
Home demonstration agent	1,007	35
Subject-matter specialist	713	24

[1] One farm may have been influenced by methods falling within more than one group and by more than one representative of the extension service.
[2] For three States only, as this information was not obtained in Iowa.

EXTENSION METHODS WHICH INFLUENCED THE ADOPTION OF INDIVIDUAL PRACTICES

On the basis of individual practices, propaganda methods were mentioned in connection with 57 per cent of the 9,833 practices reported changed. (Table 8.) Personal-service methods were reported as having been partly influential, at least, in bringing about the adoption of 16 per cent of all practices reported. In connection with 43 per cent of the practices, object-lesson methods were cited, and indirect influence affected 26 per cent of the practices. The groups of extension methods maintain the same relative standing in the case of individual practices changed as in the case of farms reached.

The county agricultural agent was mentioned as influencing 55 per cent of all practices adopted, the home demonstration agent 27 per cent, and the subject-matter specialist 18 per cent.

TABLE 8.—*Methods reported as having influenced the adoption of individual practices* [1]

Item	Number	Percentage
Practices reported adopted	9,833	100
Practices influenced by:		
Propaganda methods	5,604	57
Personal-service methods	1,580	16
Object-lesson methods	4,243	43
Indirect influences	[2] 2,159	26
County agricultural agent	5,393	55
Home demonstration agent	2,649	27
Subject-matter specialist	1,804	18

[1] One practice may have involved several methods and more than one representative of the extension service.
[2] For three States only, as this information was not obtained in Iowa

In three States [4] detailed information was obtained on individual extension methods which resulted in improved practices being adopted. Table 9 shows the relative influence of the methods reported. The emphasis placed on different extension methods in the different areas has an important bearing upon the frequency with which these methods were reported. Personal-service methods, such as farm visits and office calls, stand out in Colorado. (Figs. 4 and 5.) The method demonstration meeting received major emphasis in California. In New York, extension bulletins, news service, and circular letters were reported more frequently than in the

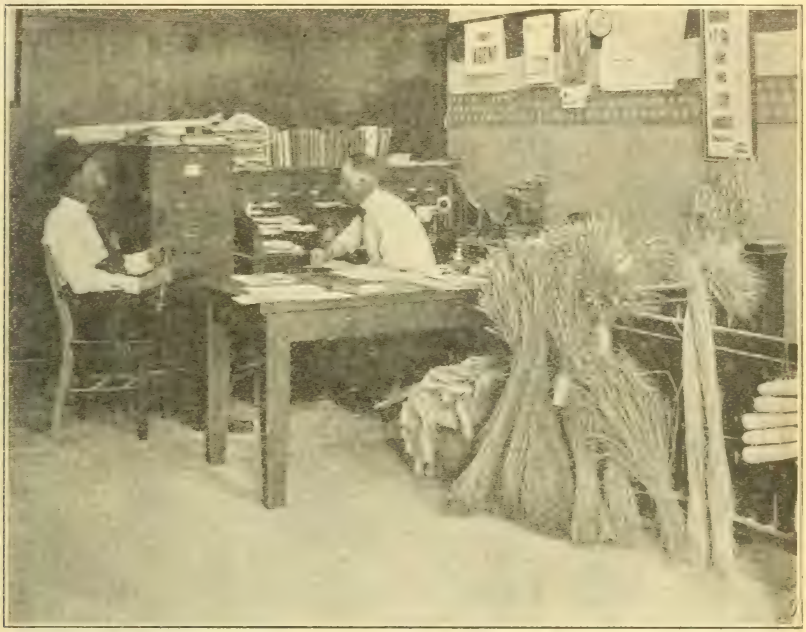

FIG. 4.—A farmer calling at the county extension office for information. Five per cent of the practices adopted were traced to the influence of office calls

other States. Regardless of the extent to which the different extension means and agencies have been emphasized, the same general relationship exists between groups of methods in all three States.

TABLE 9.—*Relative influences of extension methods reported* [a]

Method responsible	Number of practices affected	Percentage of total practices changed [b]	Method responsible	Number of practices affected	Percentage of total practices changed [b]
Adult demonstrations	3,480	42.0	Junior demonstrations	198	2.4
Meetings	3,431	41.4	Extension schools	154	1.9
Indirect	2,159	26.0	Correspondence	123	1.5
News service	904	10.9	Leader training	115	1.4
Bulletins	833	10.0	Circular letters	110	1.3
Farm visits	813	9.8	Telephone	35	.4
Office calls	434	5.2	Study courses	26	.3

[a] For three States only, as this information was not obtained in Iowa.
[b] One practice may have involved several methods.

[4] In Iowa, information relating to groups of methods only was obtained.

OTHER FACTORS AFFECTING THE ADOPTION OF PRACTICES

In addition to the extension means and agencies which were reported as having had some influence upon the adoption of improved practices, there are many other factors which have doubtless had their effect also. Among them the following might be mentioned: Condition of land occupancy, size of farms, distance from the county extension office, membership in the extension association, and participation in extension activities. A discussion of these factors will help to bring out differences between the farms adopting improved practices and those making no change as the result of extension teaching.

FIG. 5.—The county agricultural agent answers questions relating to potato growing while making a farm visit. Ten per cent of the changed practices were associated with contacts made with extension agents on the farm or in the home

CONDITION OF LAND OCCUPANCY

Owing to the greater interest in building up the productive powers of the farm and improving the farm home, owner operators might be expected to avail themselves of extension work to a greater extent than tenant operators. This is brought out in Table 10. Seventy-four per cent of all farms were operated by owners and 26 per cent by tenants. The owner group farmed 142 acres as compared with 208 acres by tenants. Seventy-one per cent of the owners adopted improved agricultural practices as compared with 60 per cent of the tenants. Improved farm-home practices were adopted by 32 per cent of the owners and 34 per cent of the tenants. In spite of the smaller farms, a considerably larger proportion of owners than of tenants

adopted improved agricultural practices. In the case of home practices adopted, ownership carried with it no apparent advantages.

TABLE 10.—*Condition of land occupancy in relation to farms changing practices*

Group	Number of farms	Percentage of all farms	Average size of farms	Percentage of farms changing practices			Average number of practices changed
				Agricultural	Home economics	Any practice	
			Acres				
Owners	2,945	74	142	71	32	76	3.5
Tenants	1,009	26	208	60	34	67	3.0

SIZE OF FARM

Although the number of acres may be a reasonably satisfactory measure of size of the farm business in a region where the type of agriculture is fairly uniform, this is not true where widely different types of agriculture are carried on. To partially overcome this difficulty, the farms in each State have been divided according to acreage into three groups nearly equal in number. The small, medium, and large sized groups have then been combined, although the acreage limitations of the groups in the different States are not the same. From Table 11 it will be noted that the percentage of farms adopting better practices increases steadily with increased size. Seventy-eight per cent of the large farms reported adoption of practices taught by the extension service as compared with 74 per cent of the medium-sized farms and with 69 per cent of the small farms. The advantage of increased size, however, is not great and affects the adoption of home practices as well as agricultural practices.

TABLE 11.—*Relation of size of farm to number of farms changing practices*

Group	Number of farms	Avergae size of farms	Percentage of farms changing practices			Average number of practices changed
			Agricultural	Home economics	Any practice	
		Acres				
Small	1,172	58	62	28	69	3.0
Medium	1,556	120	68	33	74	3.4
Large	1,226	304	73	36	78	3.7

DISTANCE FROM COUNTY EXTENSION OFFICE

That extension reaches the farms and homes at a distance from the county extension office as well as those close by is brought out in Table 12. The farms located on an average of 24 miles from the extension office adopted improved practices in 82 per cent of the cases as compared with 73 per cent of those 15 miles away and 68 per cent of those only 6 miles away. Apparently the work of both the county agricultural and home demonstration agent is appreciated fully as much by those who are far from as by those who are near extension headquarters. It is equally apparent that extension agents are

touching the people living in the open country even more intimately than those living close to town.

TABLE 12.—*Relation of distance from county extension office to farms changing practices*

Group	Number of farms	Average distance of farms	Percentage of farms changing practices			Average number of practices changed
			Agricultural	Home economics	Any practice	
		Miles				
Under 10 miles	1,171	5.5	63	27	68	3.2
10 to 19 miles	1,894	14.7	68	33	73	3.7
20 miles and over	889	23.8	76	39	82	3.1

NATURE OF ROADS

Only 2 per cent more of the farms located on improved roads (concrete, macadam, gravel) reported changed practices than of the farms located on unimproved or dirt roads (Table 13). This would indicate that extension workers are reaching the people living on back roads just as effectively as those living on main highways.

TABLE 13.—*Nature of roads as related to number of farms changing practices* [1]

Group	Number of farms	Percentage of all farms	Percentage of farms changing practices			Average number of practices changed
			Agricultural	Home economics	Any practice	
Improved roads	1,756	52	68	32	74	3.5
Unimproved roads	1,649	48	67	28	72	3.1

[1] For three States only, as this information was not obtained in Iowa.

MEMBERSHIP IN EXTENSION ASSOCIATIONS

In three of the States—Iowa, New York, and California—the farm bureau has been the farmers' organization cooperating with public agencies in forwarding the extension program. As would naturally be expected, a larger proportion of those enrolled in this association have been influenced by extension to adopt better practices than in the case of those not affiliated with the association. Table 14 indicates that 86 per cent of the present farm-bureau members reported changed agricultural practices as compared with 80 per cent of the former members and 47 per cent of the nonmembers.

TABLE 14.—*Membership in farm bureau as related to number of farms changing practices* [1]

Group	Number of farms	Percentage of all farms	Percentage of farms changing practices			Average number of practices changed
			Agricultural	Home economics	Any practice	
Members of farm bureau	1,093	34	86	47	91	4.3
Former members	679	21	80	36	84	3.4
Nonmembers	1,417	45	47	20	55	2.4

[1] For three States only, Colorado not being included.

Home departments of the extension association exist in two of the States involved, New York and California. From Table 15 it will be noted that 81 per cent of the members of the home bureau, or home department, adopted home-economics practices as compared with 68 per cent of the former members and 14 per cent of the nonmembers.

The average number of practices adopted by members was twice the number adopted by nonmembers in the case of both the farm bureau and the home bureau. A much smaller proportion of the nonmembers of the home bureau were reached with home practices than nonmembers of the farm bureau with agricultural practices.

TABLE 15.—*Membership in the home bureau, or home department, as related to number of homes changing practices* [1]

Group	Number of farms	Percentage of all farms	Percentage of farms changing practices			Average number of practices changed
			Agricultural	Home economics	Any practice	
Members of home bureau, or home department	436	16	84	81	97	5.3
Former members	233	9	81	68	90	4.4
Nonmembers	1,971	75	62	14	64	2.6

[1] Data in this table are for New York and California only.

The relationship between changed practices and membership in the extension association is brought out in Table 16. Forty-two per cent of the operators of farms on which practices were changed were farm-bureau members, as compared with 12 per cent of the operators of farms on which no practices were changed. Of the farm homes, 22 per cent of those where practices were changed were members of the home bureau as contrasted to 2 per cent of those where no practices were reported changed. Where the farm and home bureau is functioning as a county extension association, continued membership is very dependent upon effective extension work. That extension effort is not limited to members of the cooperating farmers' organizations, is evidenced by the fact that more than half of the nonmembers reported had been reached by the extension service.

TABLE 16.—*Relationship of number of farms changing practices to membership in extension association* [1]

Group	Number of farms	Percentage of all farms	Percentage member of—	
			Farm bureau	Home bureau [2]
Practices changed	2,339	73	42	22
No practices changed	850	27	12	2

[1] Most of the data in this table are for three States only, Colorado not being included.
[2] Data in this column are for New York and California only.

PARTICIPATION IN EXTENSION ACTIVITIES

Of the 3,954 farms included in this study, 586 or 15 per cent had participated in extension activities through demonstrations, field meetings, home meetings, and similar events held on their own

farms or in their own homes. (Table 17.) Practices taught by extension agents were accepted by 98 per cent of the farms in this group. In the case of 1,773 farms represented at extension activities held on neighboring farms or at community centers, 86 per cent reported changed practices. Of the 1,595 farms where members of the operators' family had not attended any extension meeting or similar activity, 51 per cent adopted improved practices. The number of improved practices adopted per farm was also much less in the last group. Participation in extension activities was apparently more important in obtaining the adoption of home practices than of agricultural practices, as is indicated by the relatively small percentage of homes not participating in extension activities which reported changed practices. That more than half of the farms not participating in extension activities reported improved practices adopted, is indicative of the importance of such extension methods as news service, bulletins, and circular letters and the indirect spread of influence from the more direct methods.

TABLE 17.—*Participation in extension activities as bearing on farms changing practices*

Group	Number of farms	Percentage of all farms	Percentage of farms changing practices			Average number of practices changed
			Agricultural	Home economics	Any practice	
Farms having extension activities on farm or in home	586	15	94	67	98	5.4
Other farms participating in extension activities	1,773	45	79	37	86	3.2
Farms not participating in extension activities	1,595	40	46	14	51	2.3

CONTACT WITH EXTENSION AGENTS

More than two-thirds of the farms reported having been in touch with one or more members of the extension service staff. Of this number 89 per cent reported the adoption of better practices as compared with 39 per cent of the farms not enjoying such contact. (Table 18.) The former group also adopted nearly twice as many practices per farm as the latter group. There is naturally a very close relationship between participation in extension activities and contact with extension workers, since a large proportion of the contacts are made in connection with attendance at demonstrations and meetings of various kinds. Participation in extension activities, however, would seem to be more productive from the standpoint of changed practices than mere contact with extension workers.

TABLE 18.—*Contact with extension workers as related to farms changing practices*

Group	Number of farms	Percentage of all farms	Percentage of farms changing practices			Average number of practices changed
			Agricultural	Home economics	Any practice	
In touch with extension workers	2,732	69	83	43	89	3.6
Not in touch with extension workers	1,222	31	35	9	39	1.9

MEMBERSHIP, PARTICIPATION, AND CONTACT

In Table 19 an attempt is made to bring out the combined influence of membership in the extension association and participation in extension activities or contact with extension agents. Where the farmer or farm woman was affiliated with the extension association and also made an effort to get in touch with the representatives of the extension service, 93 per cent reported changed practices. Where only one of these conditions was satisfied, 72 per cent adopted new practices. In the case of the remaining farms, where the operators had never been members of the extension association or had never got in touch with extension workers, 24 per cent reported changed practices. This would seem to indicate the importance of widespread membership in the extension association, if such a plan of organization is followed, combined with active participation in extension activities. That the influence of extension is also being felt on the farms and in the homes not ostensibly interested in the work, is evidenced by the fact that of the nonmembers of the extension association who had never attended an extension meeting or other activity and who had never called at the extension office or invited an extension agent to the farm, nearly a fourth reported putting into practice teachings of the extension service.

TABLE 19.—*Relationship of membership in extension associations and participation in extension activities or contact with extension workers to number of farms changing practices*[1]

Group	Number of farms	Percentage of all farms	Percentage of farms changing practices			Average number of practices changed
			Agricultural	Home economics	Any practice	
A—Farms satisfying both of the following conditions: (1) Membership in farm or home bureau—present or past; (2) participation in extension activities or contact with extension workers	1,651	52	87	50	93	4.1
B—Farms satisfying but one of the above conditions	889	28	66	20	72	2.3
C—Farms satisfying neither of the above conditions	649	20	21	6	24	1.9

[1] Data in this table are for three States only, Colorado not being included.

BOYS' AND GIRLS' CLUB WORK

Children were reported on 66 per cent of the 3,954 farms. The average number of children on these farms was 2.6 (Table 20). No account was made of children under 21 years of age who had left the farm. In three States, information was obtained relative to the ages of all children on farms. A classification of these children according to age groups indicates that only 42 per cent of the farms had boys and girls of club age (10 to 20 years), and that the average number of boys and girls of club age on these farms was 2. Thirteen per cent of all farms and 29 per cent of the farms with young people of club age were represented in club work. In the three States where the information was obtained, 21 per cent of the boys and girls from 10 to 20 years of age either were carrying on a junior project or had carried on one at some previous time. (Fig. 6.) Junior demonstrations

were mentioned as an influence in bringing about the adoption of 2.1 per cent of the 9,833 practices changed in four States. The highest percentage of practices in connection with which the influence of junior demonstrations was reported was 10.3 in a county having employed a club agent for several years.

TABLE 20.—*Relationship of boys' and girls' club work to changed practices on farms and in homes*

Percentage of farms reporting children living on farm	66.0
Average number of children on these farms	2.6
Percentage of farms with children 10 to 20 years of age	[1] 42.0
Average number of children 10 to 20 years of age on these farms	2.0
Percentage of farms with children of all ages represented in club work	13.0
Percentage of farms with children 10 to 20 years represented in club work	[1] 29.0
Percentage of children 10 to 20 years of age in club work	[1] 21.0
Percentage of practices adopted or changed through influence of junior demonstrations	2.1

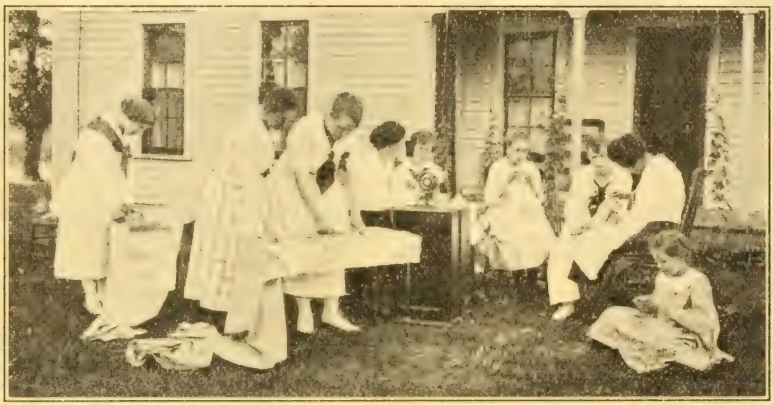

FIG. 6.—The Daisy View sewing club holds a meeting. Twenty-one per cent of the boys and girls of club age (10 to 20 years) either were enrolled in club work or had been at some previous time

SUBJECT-MATTER SPECIALISTS

In the four States cooperating in this study, there is a wide variation in the number of specialists employed to back up the county extension agents. In New York, for example, the State specialist force is equivalent to about one full-time worker per county, whereas Colorado has one specialist for about six counties. The average for the four States is about one full-time specialist for two counties.

Nearly a third (29 per cent) of all the farms involved in this study had been in touch with one or more specialists. (Table 21.) Nearly a fourth of those reporting changed practices mentioned the influence of the specialist. In connection with practices changed, the specialist's influence was reported in 18 per cent of the cases. Although the specialist's task may be largely that of training county extension agents in subject-matter extension, in practice he apparently makes direct contacts with a considerable proportion of the farming people and is a recognized factor in influencing the adoption of improved practices.

[1] For three States only, as this information was not obtained in Iowa.

TABLE 21.—*Relationship of subject-matter specialists to changed farm and home practices*

Percentage of all farms reporting contact with specialists	29
Percentage of farms reporting adoption of new practices	74
Percentage of farms reached reporting influence of specialists	24
Percentage of practices adopted or changed through influence of specialists	18

ATTITUDE TOWARD EXTENSION

In the case of the 3,405 farms in New York, Colorado, and California, from which records were obtained, information was reported regarding the attitude of the farming people toward extension work. Sixty-six per cent (2 farms out of 3) were reported as being favorable to extension activities. (Table 22.) Twenty-four per cent, or 1 out of 4, were recorded as indifferent to the work. Active opposition was noted in 4 per cent of the cases, or on the part of only 1 farm in 25. No attitude was reported for the remaining 6 per cent of the farms.

Now that extension has become established, it is gratifying to note that it has the approval of such a large percentage of the farming people. The opposition to the work, although it may be vociferous at times, is apparently not widespread among the actual tillers of the soil. The indifferent group presents an extension problem of considerable importance.

TABLE 22.—*Attitude toward extension as indicated by opinions expressed by farmers* [1]

Group	Number of farms	Percentage
Farm records obtained	3,405	100
Reported favorable	2,246	66
Reported indifferent	812	24
Reported opposed	151	4
No attitude reported	196	6

[1] For three States only, as this information was not obtained in Iowa.

SUMMARY

The study includes 3,954 farms or 94 per cent of all the farms located in typical areas of seven counties of four States concerning which information was obtained by representatives of the Federal and State extension services.

On 74 per cent of the farms, or in the case of practically three farms out of four, extension effort had brought about the adoption of one or more improved practices.

A total of 9,833 different practices were adopted, or an average of 3.4 practices per farm reached.

Propaganda methods were reported as having influenced the adoption of improved practices on 68 per cent of the farms, object-lesson methods on 58 per cent, and personal-service methods on 27 per cent. Forty-nine per cent of the farms reported indirect influences. Although the adult demonstration and the meeting head the list of extension methods in the percentage of practices influenced with 42 and 41.4 per cent respectively, the importance of other methods, such as news service, bulletins, farm visits, office calls, and the like must not be overlooked. The indirect influence of extension was reported in connection with 26 per cent of the practices adopted.

A somewhat higher proportion of owner-operators than of tenant-operators were reached by extension, but the difference is not sufficiently great to be of much significance.

The percentage of farms adopting improved practices increases directly with the size of the farms. The difference, however, is not of great importance.

Distance from the county extension office and nature of roads had little if any bearing upon the effectiveness of the extension organization.

In those States where an association of rural people has been formed to cooperate with public agencies in forwarding extension work, membership in this extension association has had an important bearing upon the adoption of improved practices. Nearly 40 per cent more of the members than of the nonmembers reported changed practices. They also adopted nearly twice as many improved practices per farm. Continued membership in the extension association is apparently closely related to effective extension teaching.

More than 90 per cent of those taking part in extension activities, such as the conducting of demonstrations, attendance at meetings, and the like, put into use some of the better practices observed as compared with 50 per cent of those not so participating.

Being in personal touch with representatives of the extension service through farm and home visits, office calls, correspondence, attendance at meetings, and the like was also an important factor in spreading better practices. Not only did more than twice as many of those making such contacts report changed practices as compared with those not enjoying such contact, but they also adopted nearly twice as many practices per farm and home.

The importance of the indirect spread of influence of extension is brought out by the fact that extension teachings were accepted by 24 per cent of the farms where the operators were not members of the extension association, had never participated in an extension activity, and had never gotten in touch with representatives of the extension service.

Twenty-one per cent of the boys and girls of club age (10 to 20 years) either were enrolled in junior project work or had previously carried on such a project. Junior demonstrations were mentioned as having helped to bring about the adoption of 2.1 per cent of all practices changed.

The subject-matter specialists located at the State agricultural college made contacts with nearly a third of the farms studied and a fourth of the farms reporting changed practices gave partial credit at least to subject-matter specialists.

Two persons out of three were reported as actively in favor of extension work as compared with 1 person out of 25 actively opposed. Twenty-four per cent of the people interviewed were not particularly interested in extension.

Satisfactory as has been the progress of extension in reaching rural people, the task of getting more farmers and home makers to accept extension teaching, and all to adopt more improved farm and home practices, presents a challenge to extension workers.

WASHINGTON : GOVERNMENT PRINTING OFFICE : 1926